

REMARKS

Applicants have amended the specification of the above-identified application to consistently refer to underframe "110", in the sole full paragraph on page 12 of Applicants' specification. Noting the paragraph bridging pages 11 and 12, as well as the first line of the sole full paragraph of page 12, of Applicants' specification, it is respectfully submitted that this amendment of the specification clearly does not add new matter to the application.

Applicants have amended their claims in order to simplify and to further clarify the definition of various aspects of the present invention. Specifically, claim 1 has been amended to simplify the recitation in connection with the joint portion, by reciting that the friction stir welded joint portion extends on a line of an extension of an interior-side surface plate of the first hollow member. Note, for example, Fig. 9 of Applicants' disclosure. Claim 1 has been further amended to recite that the exterior side of the first hollow member, of the underframe, and the exterior side of the second hollow member, of the side structure, are friction stir welded, whereby the underframe and the side structure are friction stir welded to each other at a friction stir welded joint portion.

In light of the simplification of claim 1 with respect to recitation of the friction stir welded joint portion, Applicants have added claim 5 to the application. Claim 5 corresponds to presently amended claim 1, but recites that the friction stir welded joint portion exists on a line of an extension of a connecting plate, which is substantially orthogonal to inner and outer surface plates of the second hollow member and connects the inner and outer surface plates of the second hollow

member. Note the deleted material from previously considered claim 1; see also Fig. 10 of Applicants' disclosure.

In addition to new claim 5, Applicants are adding new claims 2-4 and 6-16 to the application. Claims 2 and 6, dependent respectively on claims 1 and 5, recite that inner surface plates of the first and second hollow members are welded to each other at the interior side of the car body, by a fillet weld; and claims 3 and 7, dependent respectively on claims 2 and 6, recite that this fillet weld is a weld formed by arc welding. Claims 4 and 8, dependent respectively on claims 1 and 5, recite that the side structure is substantially orthogonal to the underframe. In connection with newly added claims 2-4 and 6-8, note, for example, page 15 of Applicants' original disclosure.

New independent claim 9 recites a car body including an underframe formed of a first hollow member and a side structure formed of a second hollow member, which are welded together, wherein the exterior side of the first hollow member, of the underframe, and the exterior side of the second hollow member, of the side structure, are friction stir welded to each other, whereby the underframe and the side structure are friction stir welded to each other. Claim 10 recites the same subject matter as set forth in claim 4, but is dependent on claim 9. Claims 11 and 12, dependent respectively on claims 9 and 11, respectively recites that the interior side of the first hollow member, of the underframe, and the interior side of a second hollow member, of the side structure, are welded to each other by a fillet weld; and recites that the fillet weld is a weld formed by arc welding. Claims 13 and 14, dependently respectively on claims 9 and 13, respectively recites that the second hollow member includes a connecting plate between an exterior surface plate of the

second hollow member and an interior surface plate of the second hollow member, extending to the friction stir welding of the exterior side of the first hollow member and the exterior side of the second hollow member; and recites that this connecting plate extends substantially orthogonally to the exterior and interior surface plates of the second hollow member. Claim 15, dependent on claim 9, recites that the first hollow member includes an interior surface, and that the interior surface of the first hollow member extends to the friction stir welding of the exterior side of the first hollow member and the exterior side of the second hollow member.

Claim 16 defines a car body that includes an underframe and a side structure formed respectively of first and second hollow members, which are welded together at two positions of interior and exterior sides of the car body. Claim 16 further recites that the exterior sides of the hollow members of the underframe and side structure are friction stir welded; and that a joint portion exists on a line of an extension of interior surface plates of the hollow members.

Applicants respectfully traverse the rejection of claim 1 as anticipated by the teachings of European Patent Application No. 893189 (Aota, et al.), and respectfully submit that all of the claims presented for consideration by the Examiner patentably distinguish over the teachings of this reference applied by the Examiner in rejecting claims in the Office Action mailed May 29, 2003.

It is respectfully submitted that this reference as applied by the Examiner would have neither taught nor would have suggested such a car body as in the present claims, having the underframe and the side structure, with the exterior side of the first hollow member, of the underframe, and the exterior side of the second hollow member, of the side structure, being friction stir welded (in particular, being

friction stir welded to each other), whereby the underframe and the side structure are friction stir welded to each other at a friction stir welded joint portion. Note each of claims 1, 5, 9 and 16.

More specifically, it is respectfully submitted that this applied reference does not disclose, nor would have suggested, such a car body as in the present claims, having the recited underframe and side structure friction stir welded to each other at a friction stir welded joint portion, and wherein the friction stir welded joint portion extends on a line of an extension of an interior-side surface plate of the first hollow member (see claim 1; note also claim 15), or wherein the friction stir welded joint portion exists on a line of an extension of a connecting plate, which is substantially orthogonal to inner and outer surface plates of the second hollow member and connects the inner and outer surface plates of the second hollow member (see claim 5; note also claim 13).

Furthermore, it is respectfully submitted that the applied reference does not disclose, nor would have suggested such a car body, having the underframe and side structure as discussed previously, these structures being friction stir welded to each other at a friction stir welded joint portion, and wherein the underframe is formed of a first hollow member and the side structure formed of a second hollow member, which are welded together at two positions. See claims 1, 5 and 16; note also claim 11, as well as claims 2 and 6.

Moreover, it is respectfully submitted that the teachings of the applied reference does not disclose, nor would have suggested, the other aspects of the present invention as in the present claims, including, for example, wherein the side

structure is substantially orthogonal to the underframe (note claims 4 and 8; and/or the joints at exterior and interior sides (see, e.g., claims 2, 6, 11 and 16).

The invention as claimed in the above-identified application is directed to a car body (for example, a body of a car that runs on rails, such as a railway car). Applicants provide the car body wherein an underframe which, for example, can form a floor of the car body, and a side structure, are joined by a friction stir weld. The car body according to the present invention can easily and effectively be provided with, for example, a good appearance, while having good strength properties.

Aota, et al. discloses a friction stir welding technique which is suitable for use in a joining of members of various materials, including, for example, aluminum alloy members, which avoids occurrence of a dent in a joined region of the members. This patent document discloses that at least one of the members to be joined has a thickened part, in cross-section, at the joining region thereof with another member, the thickened part protruding toward the rotary body used to perform the friction stir welding. Note the paragraph bridging columns 2 and 3 of this patent document. In one embodiment disclosed in Aota, et al., the described friction stir welding method is applied to a car body of railway cars, as described from column 4, line 47 to column 5, line 5. The car body of the railway car (see Fig. 5) includes a side constructive body 41, a roof constructive body 42, a floor constructive body 43 and a constructive body 44 of an end portion at a longitudinal direction. This patent document discloses that the side constructive body 41 is constituted by arranging plural hollow extruded frame members (50, 60) and by joining contacting portions thereof by friction stir welding. This patent document further discloses, in the paragraph bridging columns 4 and 5, that each of the roof constructive body and the

floor constructive body is constituted similarly, and that connections between the side constructive body 42 and the roof constructive body 41 and the floor constructive body 43 are carried out using an MIG (Metal electrode Inert Gas) welding.

It is emphasized that Aota, et al. discloses MIG welding as the specific welding for connecting the side constructive body and the floor constructive body. It is respectfully submitted that such disclosure of this patent document would have neither taught nor would have suggested, and in fact would have taught away from, the car body as in the present claims, including wherein the underframe and the side structure are friction stir welded to each other, much less wherein the exterior side of the first hollow member, of the underframe, and the exterior side of the second hollow member, of the side structure, are friction stir welded.

It is emphasized that Aota, et al. contrasts that the plural hollow extruded frame members of the floor constructive body are joined to each other by friction stir welding, and the plural hollow extruded frame members of the side constructive body are joined to each other by friction stir welding, while the side constructive body and floor constructive body are connected to each other by MIG welding. By contrasting the formation of, e.g., the side constructive body by friction stir welding, while disclosing joining of the floor constructive body and side constructive body using MIG welding, it is respectfully submitted that Aota, et al. teaches away from use of friction stir welding to join the underframe and side structure, as in the present invention.

The contention by the Examiner on page 2 of the Office Action mailed May 29, 2003, that in Aota, et al., the exterior side of the first hollow member and the exterior side of the second hollow member are friction stir welded, the Examiner

pointing to Item 70 of Fig. 1, is respectfully traversed. It is respectfully submitted that Fig. 1 shows, for example, a hollow frame member of the side constructive body being friction stir welded to a hollow frame member of the side constructive body, not wherein the exterior side of the first hollow member and the exterior side of the second hollow member, which respectively form part of the underframe and of the side structure, are friction stir welded. Particularly in view of the specific disclosure in Aota, et al. of MIG welding to weld the side constructive body and floor constructive body to each other, this patent document would have taught away from the friction stir welding of the exterior side of the first and second hollow members, as shown previously.

The further contention by the Examiner that Item 41 of Fig. 5 of Aota, et al., shows a joint portion existing on a line extended either from an interior-side surface plate of the first hollow member or from a connecting plate that connects two surface plates of the hollow member, is respectfully traversed. Item 41 generally refers to a side constructive body, and it is respectfully submitted that this item would have neither disclosed nor would have suggested the friction stir welded joint portion as in claims 1 and 5, and as seen illustratively (not to be limiting) in Figs. 9 and 10.

In view of the foregoing comments and amendments, reconsideration and allowance of all claims presently in the application are respectfully requested.

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of either by telephone discussion or by personal interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

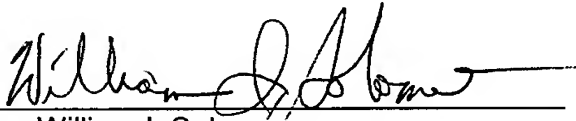
Application No.: 10/084,417

Attorney Docket No.: 648.40349VX3

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account No. 01-2135 (Docket No. 648.40349VX3), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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